Evolution of Access Networks: FTTH and WiMAX

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Ever-increasing bandwidth demands and recent mobility trends are two main challenges for the access network during the next years. On the one hand, an optical fibre based access network (Fibre to the Home or FTTH) offers of all available technologies by far the highest speed and can support a variety of services at the same time: video-on-demand, two-way videoconferencing, video email, etc. On the other hand, to enhance mobility in the access network, WiMAX may possibly offer an appropriate solution. The technology was initially developed as a fixed wireless technology, but mobile WiMAX (IEEE 802.16e-2005 revision) has introduced the important feature of (fast) mobility. This paper treats both access technologies (FTTH and WiMAX) in much more detail, and also discusses some future technical challenges. Finally, a techno-economical evaluation is made for both technologies covering the Belgian market.

A Thin Client Architecture for Mobile Users Running Multiple Applications

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Thin clients are devices that primarily depend on application servers for their processing activities. The client is only provisioned with hardware for user input and for the presentation of the graphical output to the user. This results in lightweight devices with a prolonged battery autonomy, making thin clients very attractive for mobile users. Yet, the thin client paradigm suffers from an increased latency if the user moves away from his server, since reactions to user events can appear on the screen only after a two-way client-server path delay. Responsiveness can be guaranteed if the application moves along with the user and migrates to the nearest available application server. Our research is oriented towards the development of a new thin client network architecture. Process migration systems must be seamlessly integrated with handover protocols. Therefore, new protocols will be developed, adapted to the specifics of thin client communication .

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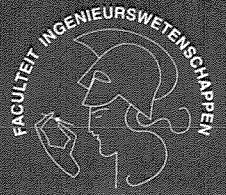

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